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October 15, 2015

Mr. Gordon W. "Jeff" Fassett, P.E.
Department of Natural Resources
P. O. Box 94676
Lincoln, Nebraska 68509-4676

Dear Mr. Fassett:

Enclosed is a copy of the Lower Loup NRD's *2015 Long-Range Implementation Plan*.

If you have any questions, please feel free to call me.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Russell Callan', is written over a horizontal line.

Russell Callan
Assistant Manager

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Enclosure

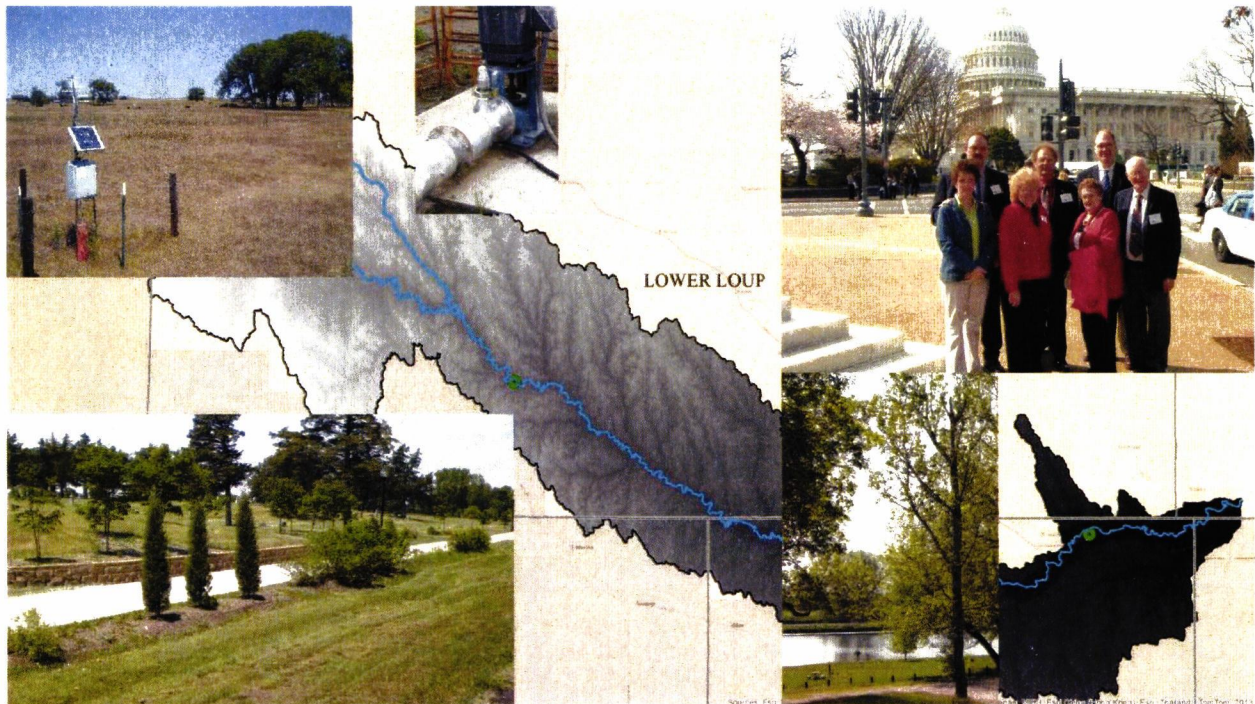
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DEPARTMENT OF
NATURAL RESOURCES



2015 Long-Range Implementation Plan



Introduction

The Lower Loup NRD (LLNRD) is dedicated to the conservation, protection, development and management of our natural resources. The 21-member locally-elected Board is charged with the task of establishing policy that fits the interests of the State of Nebraska, the District, and its citizens. The General Manager is responsible for implementing the policies and direction that the Board has established.

The LLNRD Board of Directors has a Master Plan that includes the District's goals and objectives. This Long-Range Implementation Plan will give a general timeline for completion and will indicate the funding necessary to carry out the goals and objectives.

The LLNRD works closely with local, state, and federal agencies to coordinate the management of our conservation efforts. The District values these relationships and recognizes that they are required to perform the tasks and responsibilities that the LLNRD has been charged with.

The Natural Resources Declaration of Intent

The Legislature hereby recognizes and declares that it is essential to the health and welfare of the people of the State of Nebraska to conserve, protect, develop, and manage the natural resources of this state. The Legislature further recognizes the significant achievements that have been made in the conservation, protection, development, and management of our natural resources, and declares that the most efficient and economical method of accelerating these achievements is by creating natural resources districts encompassing all of the area of the state, as provided by this act.

More specifically, the Legislature provided 12 purposes of NRDs in Section 2-3229.

The purposes of natural resources districts shall be to develop and execute through the exercise of power and authorities contained in this act, plans, facilities, works, and programs relating to:

1. *Erosion prevention and control*
2. *Prevention of damages from flood water and sediment*
3. *Flood prevention and control*
4. *Soil conservation*
5. *Water supply for any beneficial uses*
6. *Development, management, utilizations, and conservation of groundwater and surface water*
7. *Pollution control*
8. *Solid waste disposal and sanitary drainage*
9. *Drainage improvement and channel rectification*
10. *Development and management of fish and wildlife habitat*
11. *Development and management of recreational and park facilities*
12. *Forestry and range management*

The District's Priorities

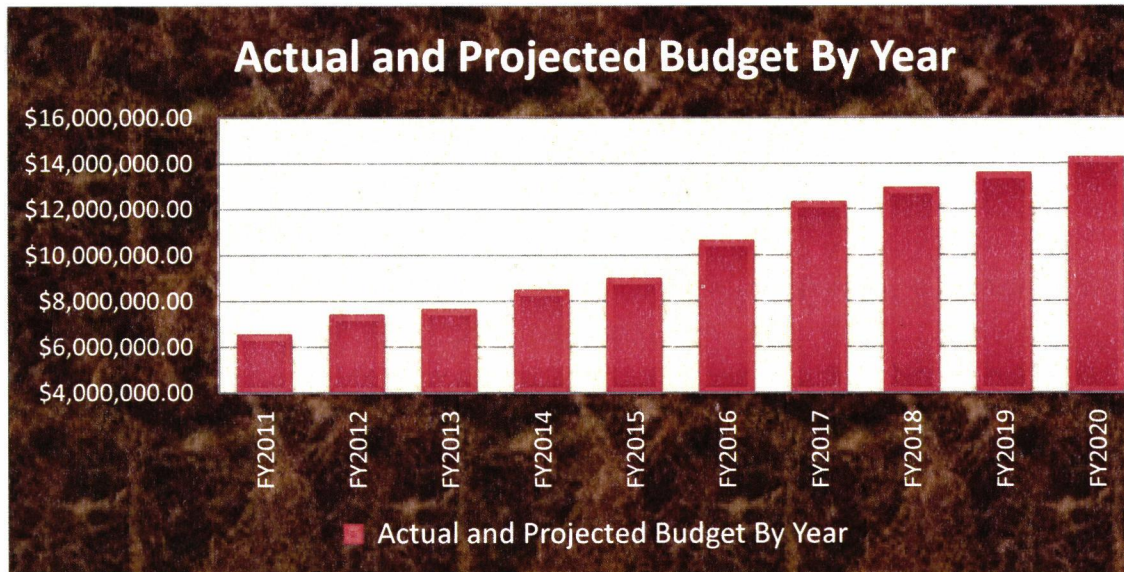
The Lower Loup NRD Board of Directors met and developed an overall prioritization of the District's general direction and focus. A prioritized list of items was generated and will be used to assist the General Manager and staff in the planning and budgeting process --

1. Priority 1 – Water quality
2. Priority 2 – Water retention (surface water/storage/recharge/dams)
3. Priority 3 – Protection of basin resources
4. Priority 3 – Buffer strips/streambank stabilization and maintenance/wetland management
5. Priority 4 – Forestry – rural & urban/tree planting/shelterbelts
6. Priority 5 – New irrigated acres development
7. Priority 6 – Public promotion/awareness/education in schools & clubs
8. Priority 7 – Range management
9. Priority 8 – Wellhead protection
10. Priority 9 – Soil conservation/system approach to no-till/cover crops
11. Priority 10 – Habitat development/recreation/pivot corners/native plant restoration/species diversification for landscaping
12. Priority 11 – Control of invasive weeds on rivers/streams
13. Priority 12 – Project participation policies/process
14. Priority 13 – Interaction with irrigation districts and municipalities
15. Priority 14 – Parks/arboretum/recreational areas/trails/assistance
16. Priority 15 – Cost-share practices/incentives (development) vs. penalties (efficiency)
17. Priority 16 – Hunting/fishing/acres & access/habitat/wildlife/game birds
18. Priority 17 – Sandhills wetland management & conservation
19. Priority 18 – New land development
20. Priority 19 – Ecotourism
21. Priority 19 – Additional funding for planned grazing systems
22. Priority 19 – Flood control/protection of municipalities/prioritize concern/problem areas flooding/damage
23. Priority 20 – Role of land use in watersheds

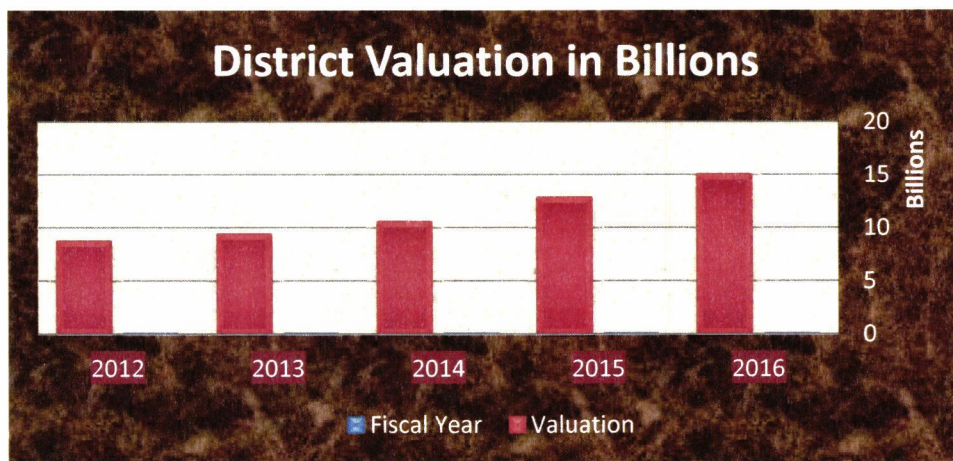
District Financing and Budgeting

The Lower Loup NRD has multiple funding sources available with the creation of NRDs -- the taxing authority of 4.5 cents granted to the District in 1969, the 1 cent levy granted for water programs in 2004, the occupation tax granted in 2007, the ability to assess fees through improvement project areas, the ability to charge fees for certain activities, and furnish match

money to apply for grant funding. This allows the District the ability to obtain financing by sources other than just tax dollars. The District's budget, property tax request, and resulting levys are set and approved by the Board of Directors.

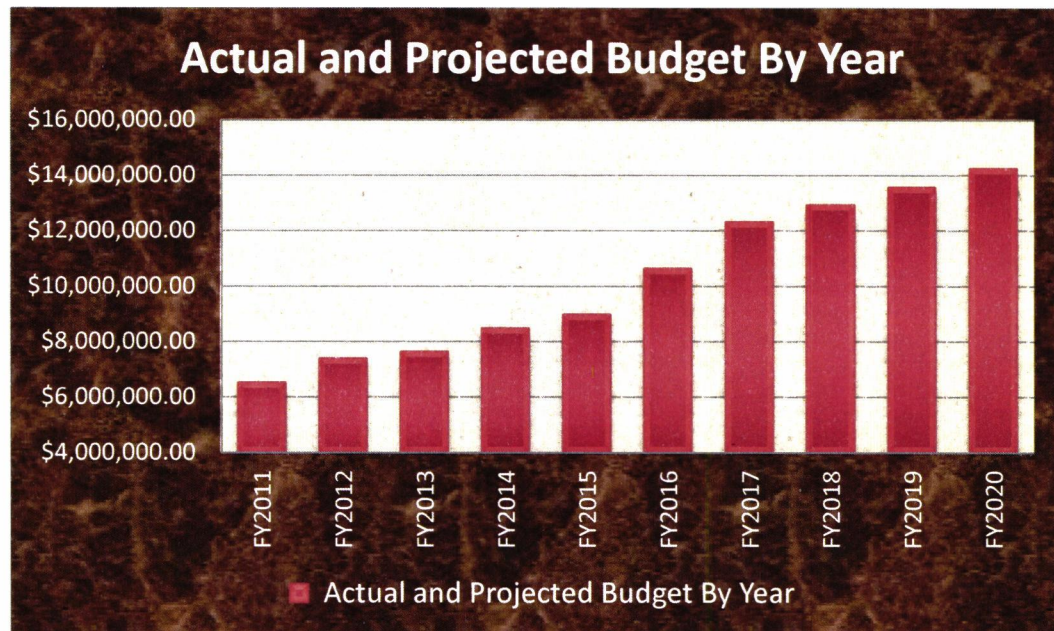


The District is comprised of all or parts of 16 counties. The counties are diverse across the District, from an urban/farming setting in the east to rangeland in the northwest. The LLNRD works with the county assessors, who are responsible for setting the county valuations.



Fiscal Year	Valuation
2016	\$14,987,031,569
2015	\$12,822,529,309
2014	\$10,548,151,148
2013	\$9,369,081,150
2012	\$8,687,029,088

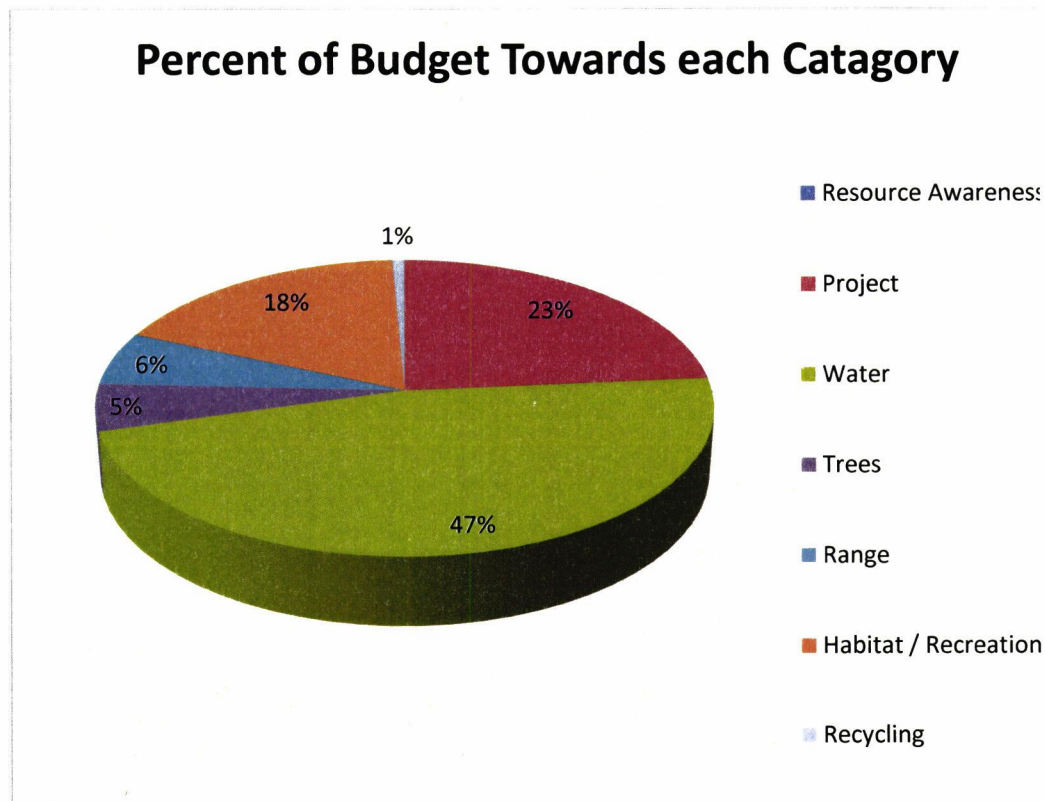
The Board of Directors and the General Manager of the District are charged with the task of balancing the need to manage our natural resources and the responsibility to use patron tax dollars wisely. This task is a complicated one, especially with the increasing statutory requirements and use of natural resources.



This spreadsheet shows what the budgeted amount is for each general category by fiscal year.

Goal Number	Description	FY2016	FY2017	FY2018	FY2019	FY2020	Total
1	Resource Awareness	\$55,350.00	\$58,065.00	\$60,913.25	\$63,901.41	\$67,036.49	\$305,266.15
2	Flood Protection	\$740,000.00	\$740,000.00	\$740,000.00	\$640,000.00	\$440,000.00	\$3,300,000.00
3	Water Quantity	\$991,700.00	\$905,580.00	\$947,454.00	\$991,421.70	\$991,421.70	\$4,827,577.40
4	Trees	\$143,000.00	\$180,150.00	\$157,657.50	\$165,540.38	\$173,817.39	\$820,165.27
5	Water Quality	\$597,000.00	\$626,850.00	\$658,192.50	\$691,102.13	\$725,657.23	\$3,298,801.86
6	Soil Erosion	\$185,000.00	\$194,250.00	\$203,962.00	\$214,160.63	\$224,868.66	\$1,022,241.28
7	Range	\$183,000.00	\$192,150.00	\$201,757.50	\$211,845.38	\$222,437.64	\$1,011,190.52
8	Drainage Improvement	\$21,600.00	\$21,600.00	\$21,600.00	\$21,600.00	\$21,600.00	\$108,000.00
9	Fish and Wildlife Habitat /	\$30,000.00	\$5,000.00	\$5,000.00	\$5,000.00	\$5,000.00	\$50,000.00
10	Recreation	\$1,391,500.00	\$1,243,500.00	\$127,500.00	\$134,500.00	\$141,500.00	\$3,038,500.00
11	Recycling	\$21,404.00	\$25,000.00	\$25,000.00	\$25,000.00	\$25,000.00	\$121,404.00
	Total	\$4,359,554.00	\$4,192,145.00	\$3,149,036.75	\$3,164,071.61	\$3,038,339.11	\$17,903,146.47

The following pie chart looks at the percent of the total projected budget that could be spent in each category.



District Staffing

The Lower Loup NRD has a staff of 15 full-time employees at the District Headquarters office in Ord. The staff also includes 8 District Secretaries at the Natural Resources Conservation Service offices in Albion, Broken Bow, Burwell, Columbus, Fullerton, Spalding, Ord, and St. Paul. There are also 4 NRD Field Staff located in Broken Bow, Columbus, Spalding, and Fullerton. Part-time and seasonal staff is employed for tree planting, drip irrigation installation, and maintenance of the NRD Arboretum, as well as Davis Creek and Pibel Lake recreation areas.

Leon "Butch" Koehlmoos General Manager	Russell Callan Assistant General Manager	Rita Goldfish Administrative Assistant
Dell Harris Water Resources Specialist	Cheryl Hornickel Programs Assistant	Jane Klanecky Secretary/Receptionist
Irene Kreifels Financial Secretary	Vacant Position District Engineer	Tyler Naprstek Water Modeling Coordinator

Larry Schultz Information & Education Coordinator	LeeAnn Smith Water Programs Assistant	Richard Woollen North Central District Forester Nebraska Forest Service
Anne Freeman Program Secretary	Phillip Hill Park/Shop Superintendent	Vacant Position Groundskeeper
Vacant Position Database Person	Vacant Position Information & Education Assistant	

District Secretaries

Kandis Bremer Albion Field Office	Ona Foland Columbus Field Office	Peggy Griffin St. Paul Field Office
Jeanne Horacek Fullerton Field Office	Ginny John Broken Bow Field Office	Julie McBride Burwell Field Office
Marie Schmeits Spalding Field Office	Beverly Smedra Ord Field Office	

NRD Field Staff

Kyle Charron Conservation Technician Broken Bow	Tyler Collier Water Resources Technician Ord	Ed Drozd Conservation Technician Columbus
Brian Kolar Water Programs Specialist Ord	Mike Lorenz Agronomy Technician Fullerton	Jason Moudry Water Programs Specialist Ord
Daniel Ray Conservation Technician Spalding	Vacant Position Range Technician	Vacant Position Range Technician

District Goals and Objectives

The Lower Loup NRD's Master Plan lists 12 goals and objectives of the District. This Long-Range Implementation Plan will give each one of those goals a general timeline for completion, a relative priority by the Board of Directors, and the financial obligation to complete the tasks. This plan is considered to be a working document with yearly reviews and updates by both the District staff and Directors.

The accompanying goals and objectives are somewhat modified to reflect changes of the District operation, yet remain basically the same.

1. Resource Awareness
2. Prevent damage from flood water
3. Development and management of groundwater and surface water for beneficial uses
4. Forestry management
5. Water quality and pollution control
6. Erosion prevention, control and sediment reduction

7. Range management
8. Drainage improvement and channel rectification
9. Development and management of fish and wildlife habitat
10. Development and management of recreational and park facilities
11. Solid waste disposal

1) Resources awareness

The Lower Loup NRD promotes natural resources conservation through a public information program that includes quarterly newsletters and multi-media news programming. The NRD utilizes two newsletters, *In The Loup* and *Water Matters*, to share details of ongoing projects and programs. *In The Loup* is a quarterly newsletter which covers a wide range of NRD activities and provides general information on the work of the District. *Water Matters* is an annual newsletter targeted to residents who live inside the Lower Loup NRD's groundwater management areas. It offers information specifically related to water quality.

The District also provides news releases to newspapers within the District informing the public of programs, events, and general natural resources news.

<u>Timeline</u>	<u>Priority</u>	<u>Projected cost FY 2016-2020</u>
1 – 5 Years	Fits all priorities	\$305,000.00

The Lower Loup NRD makes information, forms and other useful information available 24 hours a day on its web site, www.llnrd.org. The site provides the public with access to a variety of data, ranging from the NRD's Groundwater Management Rules and Regulations to announcements of the next NRD Board of Directors meeting to crop water use information. The site also provides the NRD's field offices with immediate access to District data. The LLNRD plans to upgrade the site to allow required annual reporting by producers in groundwater management areas. The LLNRD site includes links to sites and information of other natural resources agencies.

<u>Timeline</u>	<u>Priority</u>	<u>Projected Cost FY 2016-2020</u>
1 – 5 Years	Fits all Priorities	\$10,750.00

The Lower Loup NRD provides and hosts educational opportunities for both elementary and secondary school students across the District. Elementary students may attend LLNRD presentations at the annual Groundwater Festival in Grand Island and the

Environmental Festival in Ord. Activities for secondary students include range judging, land judging, and Envirothon. These events provide students the opportunity to showcase their knowledge of natural resources in a competitive setting.

<u>Timeline</u>	<u>Priority</u>	<u>Projected Cost FY 2016-2020</u>
1 – 5 Years	Fits all Priorities	\$40,337.00



Larry Schultz working with a group of students during the Environmental Festival at the Valley County Fairgrounds

2) Prevent damage from flood waters

Through watershed planning and management, the LLNRD will continue to provide technical and financial assistance to urban and rural residences within the District for the protection of lives and property. The District has participated in numerous county and city projects.

As the budget warrants, the District is cooperating with various agencies to acquire LiDAR imagery for the entire Lower Loup NRD. LiDAR is a form of topography imaging with the capability of one-foot contours. This information will assist in floodplain mapping and structure designs.

The LLNRD Board of Directors understands the need for water storage and management within the District. The Board is proposing setting monies aside to study and look into potential location and the need for dams, water augmentation, flood protection, and or groundwater recharge projects.

<u>Timeline</u>	<u>Priority</u>	<u>Projected Cost FY 2016-2020</u>
1 – 5 Years	1,2,3,5,10,12,13,16,19,20	\$3,300,000.00

The Columbus levee system has received a recent evaluation and, due to recertification of the levee, upgrades and maintenance will be required. The LLNRD, city of Columbus, and the U.S. Corps of Engineers will be working together to ensure that the city of Columbus is protected by the levee for years to come.

<u>Timeline</u>	<u>Priority</u>	<u>Projected Cost FY 2016-2020</u>
1 – 5 Years	3,6,19	\$1,099,140.00



Columbus levy

The LLNRD continues to have success working with the counties in the District to replace old bridges with flood control road structures. These structures provide both flood control and an avenue for roads to cross the waterways. The LLNRD will continue to provide technical support and financial assistance for qualifying projects.

<u>Timeline</u>	<u>Priority</u>	<u>Projected Cost FY 2016-2020</u>
1 – 5 Years	3, 6, 19	\$200,000.00



County Road Structure

3) Development and management of groundwater and surface water for beneficial uses

The District's goal of the development and management of groundwater and surface water is a major portion of the activities and financial obligation.

The District has a yearly monitoring program of the District's groundwater quantity. The program includes static water levels, both manually recorded and the installation of electronic data collection loggers in dedicated monitoring wells and privately owned irrigation and stock wells. The District promotes the wise use of water in irrigation, domestic, and commercial uses through educational programs, newsletters, and cost-share programs.

The District also provides funding for a stream gauge on the South Loup River at Arnold to assist the USGS with stream flow data. The District is hoping to add additional

gauges to the stream flow monitoring network. This information is very important in the management of both groundwater and surface water.

<u>Timeline</u>	<u>Priority</u>	<u>Projected Cost FY 2016-2020</u>
1 – 5 Years	3, 5, 6, 8, 12, 13, 15, 17, 20	\$4,873,743.00

The FY 2016 budget includes several proposed and approved water quantity projects. The South Loup River has been a focus area for the Board, and they have approved a recharge study, a thermal imagery project, and are developing a watershed plan.



Conservation and Surveys Jim Goeke Logging Test Holes

The District has entered into a cooperative agreement with the lower Platte River Basin NRDs and the Department of Natural Resources. This agreement is to work together to produce a basin-wide water management plan. The plan will assist in water management across District lines with the participation of DNR. The District sees this as an important tool going forward in water management.

The District has made a request to the Department of Natural Resources to join the District in the Voluntary Integrated Management Plan process. This process is a joint effort by both parties to manage groundwater and surface water with common goals.

<u>Timeline</u>	<u>Priority</u>	<u>Projected Cost FY 2016-2020</u>
1 – 5 Years	2, 3, 6, 12, 18, 20	\$100,000.00

4) **Forestry management**

Tree planting continues to be an important program for the LLNRD. The cooperation between the Nebraska Forest Service, the Natural Resource Conservation Service, and the rural and urban citizens proves to be a great method to get properly designed windbreaks and tree plantings on the land. The District has seen a reduction in the number of trees planted in the last few years but continues to promote and recommend the planting of trees.

<u>Timeline</u>	<u>Priority</u>	<u>Projected Cost FY 2016-2020</u>
1 – 5 Years	1, 3, 4, 7, 9, 10, 14, 15, 16	\$895,165.00



Living Snow Fence Sargent Highway

The Aagaard Farm is an official State Arboretum that the LLNRD continues to use to evaluate and demonstrate different tree species, and also study site preparation and herbicide uses. Recently, Ponderosa pine trees were planted, its seed source being native to Nebraska and harvested from Jones Canyon near Burwell and Pine Canyon in

Custer County. Pheasants Forever promotes shrub plantings for habitat, so the District has planted several shrub bunches. These sites are used for research and demonstration purposes. The Aagaard Farm has been a wildlife preserve since the NRD received the 480 acre farm. Currently there is approximately 55 acres of food plots/crop ground. The installation of a well and water system on the farm has proven to be an asset. The construction of a metal building will also provide a location for continued conservation education activities. The building has a meeting room and facilities to accommodate groups.

<u>Timeline</u>	<u>Priority</u>	<u>Projected Cost FY 2016-2020</u>
1 – 5 Years	3, 4, 7, 9, 10, 12, 14, 15, 16	\$75,000.00



Aagaard Farm 2005

5) Water quality and pollution control

With the LLNRD Board of Directors approval of the Groundwater Management Plan in 1985, they made a commitment to water quality within the LLNRD. This commitment and enforcement is made possible by the Groundwater Management and Protection Act. In 2001, the Board of Directors approved rules and regulations that place the entire District into a Phase I Management Area for water quality. The Phase I designation is a commitment by the Board to promote, through educational and water sampling programs, the education of themselves and the general public on the condition of our water resource.

The water quality program includes sampling approximately 1,500 domestic and irrigation wells per year for nitrates. This program also includes a portion of the monitoring well network that supplies information to the Department of Environmental Quality for its annual report to the Nebraska Legislature.

The District has one Phase III Management Area, which is an area with median water nitrate levels of over 8.5 ppm. Since the area continues to have an increase in water nitrates, the Board has required that the area install flow meters on all irrigation systems to better measure the amount of nitrates that are applied through the irrigation water.

The District will continue to promote water quality within Wellhead Protection Areas to ensure municipalities have a safe drinking water supply. The Lower Loup NRD Board has made a strong commitment to promote removing potential contamination sources outside of the Wellhead Protection Areas.

<u>Timeline</u>	<u>Priority</u>	<u>Projected Cost FY 2016-2020</u>
1 – 5 Years	1, 3, 6, 8, 12	\$3,298,801.00

6) Erosion prevention, control and sediment reduction

The LLNRD has worked closely with the Nebraska Department of Natural Resources and the United States Department of Agriculture, through the Natural Resources Conservation Service, to provide technical and financial assistance to producers in the District for the prevention and control of soil erosion. The District has provided a mechanism for cost-share programs and staffing in both the NRCS and LLNRD offices.

The NARD has passed a resolution to review and supply input and possible legislation to change the Erosion and Sediment Control Act to enable NRDs to better understand and enforce the Act.

<u>Timeline</u>	<u>Priority</u>	<u>Projected Costs FY 2016-2020</u>
1 – 5 Year	1, 3, 9	\$1,022,241.00

7) Range management

The LLNRD is in the process of reviewing and evaluating our Range Management involvement. With the large number of range acres within the District, the Board has directed staff to work with the NRCS to determine the workload and needs to manage the rangelands. The Natural Resources Conservation Service has worked with the NRD with Joint programs in the past and the NRD will continue to promote and assist with those programs.

<u>Timeline</u>	<u>Priority</u>	<u>Projected Cost FY 2016-2020</u>
1 – 5 Years	1, 3, 5, 6, 7,9,10, 11, 16, 17, 19, 20	\$1,011,190.00

8) Drainage improvement and channel rectification

The LLNRD has repeatedly participated in channel rectification projects. The channel maintenance allows flood waters to travel past the urban settings without causing additional damage. The District continues to provide financial possibilities, as well as staffing services for these projects.

The Board of Directors has directed staff to develop a Stream Bank Stabilization cost share program that would allow landowners a 50% cost share up to \$10,000

<u>Timeline</u>	<u>Priority</u>	<u>Projected Cost FY 2016-2020</u>
1 – 5 Years	3, 13, 19	\$108,000.00



Completed channel and congested channel

The Improvement Project Area (IPA) section of State Law provides an effective vehicle for groups of landowners to apply drainage improvements to their property. The Duncan East IPA in Platte County is a good example of how this can work. The NRD can participate in the initial construction when it provides benefits to the general public. Otherwise, any normal maintenance costs are borne by the landowners. A small amount of staff time is used for administration. Staff is continually alert to situations when the formation of an IPA would be appropriate.

<u>Timeline</u>	<u>Priority</u>	<u>Projected Cost FY 2016-2020</u>
1 – 5 Years	18, 19, 20	\$48,000.00

9) Development and management of fish and wildlife habitat

The LLNRD continues to promote and encourage the development, enhancement, and protection of wildlife habitat. There are several recreational facilities maintained and financed through the District's programs, including recreation areas at Pibel Lake, and Davis Creek, and the Aagaard Research Farm. Habitat programs are supported through the tree planting program, grass seed program, and cost-share assistance programs in cooperation with the Natural Resources Conservation Service, and are not figured in with this dollar amount. This item does include dollars targeted to the Pheasants Forever program and money set aside for a District habitat program.

<u>Timeline</u>	<u>Priority</u>	<u>Projected Cost FY 2016-2020</u>
1 – 5 Years	3, 4, 7, 10, 12, 14, 16, 17	\$50,000.00



Wildlife Waterer at the Aagaard Research Farm

10) Development and management of recreational and park facilities

Pibel Lake is located in south-central Wheeler County. In 2012, the Nebraska Legislature transferred lake ownership from the Nebraska Game and Parks Commission to the Lower Loup NRD. The recreation area requires maintenance and needs some facility upgrades. A picnic shelter is planned, as well as the replacement of a restroom. Staff is also utilizing an Environmental Trust Grant to install a sediment control structure and to repair the outlet structures to protect the lake. The plan is to also add two handicapped fishing piers to enhance the fishing access. The District has contracted with JEO Engineering to develop a Watershed Management Plan for Clear Creek which is the water source for Pibel Lake. The Watershed Plan will help to protect the lakes water quality and help producers to develop Best Management Practices for their farming operations.

<u>Timeline</u>	<u>Priority</u>	<u>Projected Cost FY 2016-2020</u>
1 – 5 Years	1, 2, 3, 6, 11, 14, 16, 19	\$900,000.00



Pibel Lake recreation area

Davis Creek Recreation Area has become a highly used recreation facility. The camping area continues to be full during the summer holidays. Fishing and boating are important recreational activities to the area, and the LLNRD is planning to add a new fishing dock and some additional picnic shelters to the area. The area doesn't have security lighting at the boat ramp, campground, or restroom facilities, so the Board has approved a proposal to add electricity onto the site to allow this upgrade. Staff has also been directed to get bid proposals for adding a pressurized water system in the recreational facility.

<u>Timeline</u>	<u>Priority</u>	<u>Projected Cost FY 2016-2020</u>
1 – 5 Years	2, 3, 6, 11, 14, 16, 19	\$1,435,000.00



Ramp to location for boat dock at Davis Creek

Trails, both large and small, have become popular in many District communities. Trails are functional and recreational, providing efficient routes for alternative transportation, as well as pleasant and safe places for activities such as walking, running, and biking. As the need arises, the LLNRD plans to continue to provide financial participation for trails sponsored by public agencies or community organizations.

<u>Timeline</u>	<u>Priority</u>	<u>Projected Cost FY 2016-2020</u>
1 – 5 Years	14	\$110,000.00

The Lower Loup NRD continues to promote community and urban forestry. The current Community Forestry Program requires that a public entity establish a legally constituted Community Tree Board. The program assists communities with tree inventories, planting, removal, and care. With an approved request, the program will also provide financial assistance for nursery stock and some supplies.

The District has seen a need to broaden the scope of this program to include additional functions such as urban recreation facilities, parks, playgrounds and green space areas.

<u>Timeline</u>	<u>Priority</u>	<u>Projected Cost FY 2016-2020</u>
1 – 5 Years	4, 6, 14, 19	\$225,000.00

11) Solid waste recycling and disposal

The District will continue to encourage communities and organizations to promote and sponsor recycling. Through newsletters and the web site, the LLNRD will list recycling events time and dates.

<u>Timeline</u>	<u>Priority</u>	<u>Projected Cost FY 2016-2020</u>
1 – 5 Years	3, 6	\$125,000.00

Conclusion

The Lower Loup NRD's mission is the conservation, protection, development and management of natural resources in the lower portion of the Loup River Basin. The Board of Directors and staff will review, adapt, and amend this long-range plan to reflect the needs of the basin and its residents. Reviews will be done on an annual basis and any modifications to the goals and objectives deemed necessary will be made by staff at the direction of the Board.

This plan was approved by the Lower Loup NRD Board of Directors on October 24, 2015.